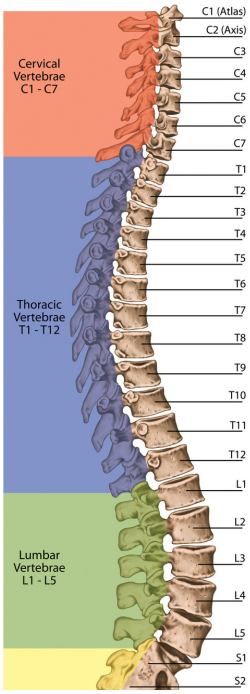
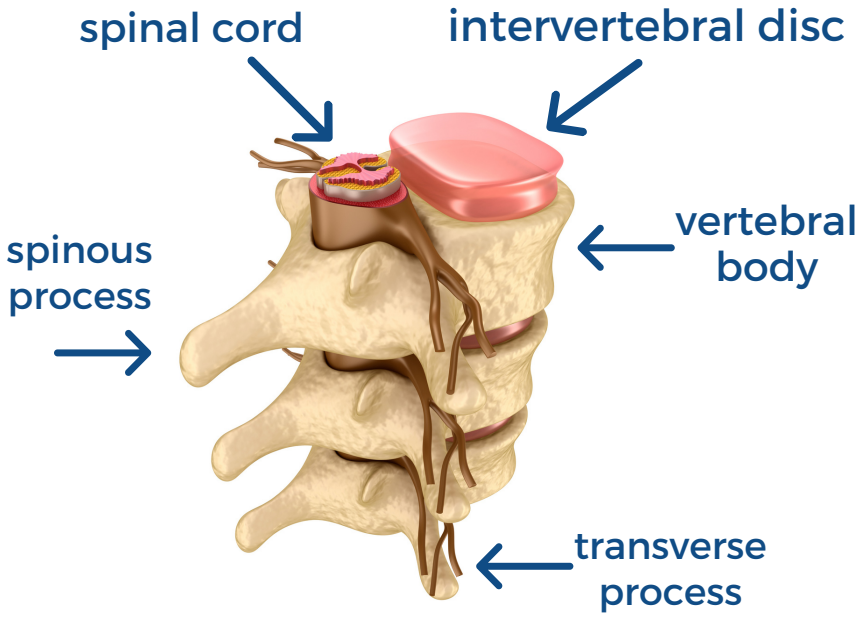
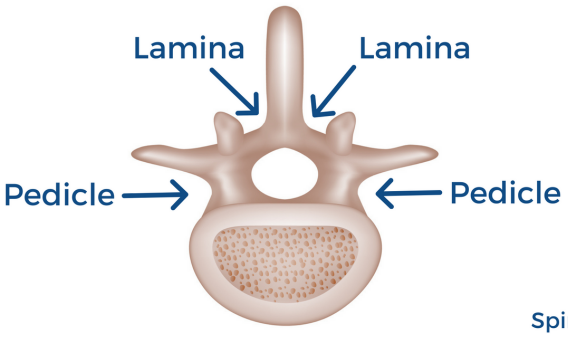
APPLIED ANATOMY FOR YOGIS: THE SPINE & CORE

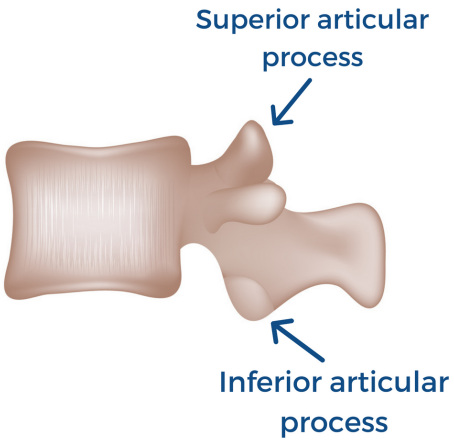
with Jenni Rawlings

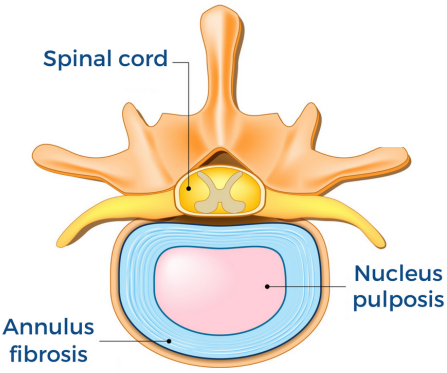
Bony structure of the spine & vertebrae











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References mentioned in the course & further reading/listening suggestions:

-Do You Need Direct Core Training? -article by Travis Pollen

-Oliver Crossley - YogicPhysio - researched-based physical therapist & yoga teacher - great to follow on Instagram!

-A Modern Approach to Low Back Pain - 16-minute podcast interview w/ Dr. Greg Lehman

-Brinjikji, Waleed, et al. "Systematic literature review of imaging features of spinal degeneration in asymptomatic populations." American Journal of Neuroradiology 36.4 (2015): 811-816.

-Suri, Pradeep, et al. "Inciting events associated with lumbar disc herniation." The Spine Journal 10.5 (2010): 388-395.

-Howe, Louis, and Greg Lehman. "Getting out of Neutral: The Risks and Rewards of Lumbar Spine Flexion During Lifting Exercises."

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References cont'd:

-Belavý, Daniel L., et al. "Running exercise strengthens the intervertebral disc." Scientific reports 7.1 (2017): 1-8.

-Mitchell, Ulrike H., et al. "Long-term running in middle-aged men and intervertebral disc health, a cross-sectional pilot study." PloS one 15.2 (2020): e0229457.

-Battié, Michele C., et al. "The Twin Spine Study: contributions to a changing view of disc degeneration." The Spine Journal9.1 (2009): 47-59.

-Ming Zhong, M. D., and Jin Tao Liu. "Incidence of spontaneous resorption of lumbar disc herniation: a meta-analysis." Pain physician 20 (2017): E45-E52.

-Wong, Arnold YL, et al. "Do changes in transversus abdominis and lumbar multifidus during conservative treatment explain changes in clinical outcomes related to nonspecific low back pain? A systematic review." The Journal of Pain 15.4 (2014): 377-e1.

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References cont'd:

-McGill, Stuart M., et al. "Coordination of muscle activity to assure stability of the lumbar spine." Journal of electromyography and kinesiology 13.4 (2003): 353-359.
-Grenier, Sylvain G., and Stuart M. McGill. "Quantification of lumbar stability by using 2 different abdominal activation strategies." Archives of physical medicine and rehabilitation88.1 (2007): 54-62.
-Mawston, Grant, et al. "Flexed lumbar spine postures are associated with greater strength and efficiency than lordotic postures during a maximal lift in pain-free individuals." Gait & Posture 86 (2021): 245-250.

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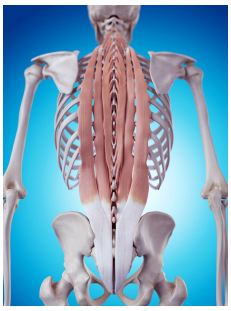


Erector Spinae: iliocostalis, longissimus, spinalis

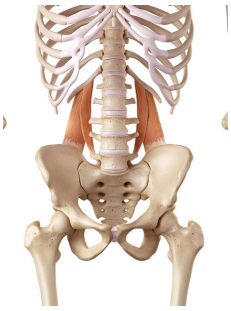
Actions: extends spine & anteriorly tilt pelvis; laterally flex the spine, ipsilaterally rotate spine

Attachments: from sacrum & ilium to upper spine, ribs, head

Transversospinalis: spinalis, multifidus, rotatores

Actions: stabilization & proprioception

Attachments: all along the spine from a transverse process of one vertebra to a spinous process of a superior vertebra



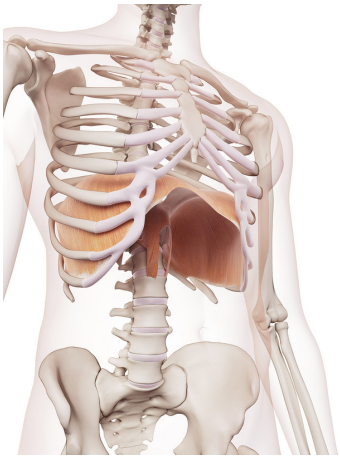
Quadratus Lumborum

Actions: Laterally flexes the spine, extends the spine, assists inhalation

Attachments: iliac crest to 12th rib & lumbar transverse processes

Thoracolumbar fascia / Lumbodorsal fascia

Muscles that attach to this sheet of connective tissue: transverse abdominis, internal oblique, latissimus dorsi, gluteus maximus



Diaphragm

Actions: respiration, spinal stabilization

Attachment, proximal: made up of peripheral muscle and central tendon / peripheral muscle originates on ribs, sternum, and lumbar spine. Xyphoid process, ribs 6-12, and the cruras T-12 through L2

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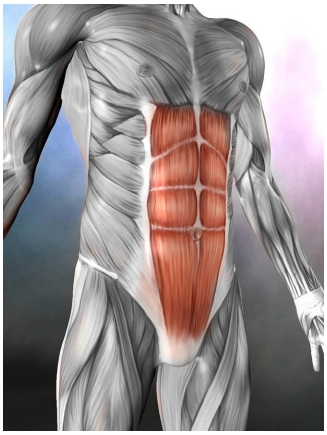
Psoas

Actions:
hip flexion,
hip external rotation,
spinal stabilization

Attachment, proximal:
bodies and intervertebral disks of T12-L5, transverse processes of L1-L5
Attachment, distal:
lesser trochanter of the femus



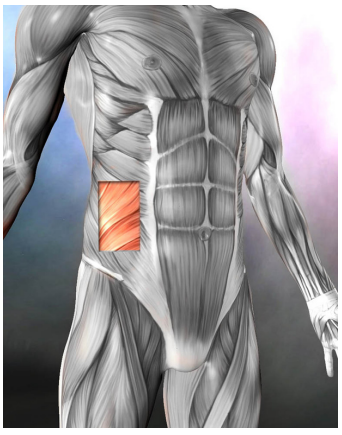
Rectus Abdominis

Actions: flexes the trunk, laterally flexes the trunk

Attachments: Pubic symphysis & crest to xyphoid process & cartilage of ribs 5-7

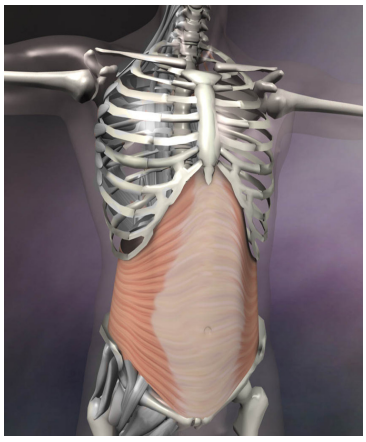
External Oblique

Actions: flexes the trunk, laterally flexes the trunk, contralaterally rotates the trunk
Attachments: anterior iliac crest, pubic bone and abdominal aponeurosis to lower 8 ribs



Internal Oblique

Actions: flexes the trunk, laterally flexes the trunk, ipsilaterally rotates the trunk
Attachments:
inguinal ligament, iliac crest and thoracolumbar fascia to lower 3 ribs and abdominal aponeurosis



Transverse Abdominis

Actions: compresses the abdominal contents
Attachments:
thoracolumbar fascia, abdominal aponeurosis, linea alba, iliac crest, inguinal ligament, to costal cartilage of ribs 7-10